

ABSTRACT

The present invention concerns the use of methods to treat bone loss by inhibiting osteoclast precursor cell fusion. Describe herein is the molecular cloning of a polypeptide encoding a protein termed RAIN. The functions of RAIN include regulating osteoclast differentiation and fusion events. In certain embodiments, compositions comprising polynucleotide and/or polypeptides of RAIN may be used in therapeutic compositions and methods for treating bone loss. In various embodiments, bone loss may be treated by inhibiting the differentiation of osteoclast. Inhibition of osteoclast differentiation may be accomplished by inhibiting osteoclast precursor cell fusion, thus inhibiting the formation of a multi-nucleate resorptive osteoclast.